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VILLAGE OF CHATSWORTH

GROUND WATER SURVEY

Ministry of the Environment
Ontario

The Honourable
George A. Kerr, Q.C.,
Minister

Everett Biggs,
Deputy Minister

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MINISTRY OF THE ENVIRONMENT

VILLAGE OF CHATSWORTH

GROUND WATER SURVEY

TECHNICAL SERVICES BRANCH

GROUND WATER DEVELOPMENT SECTION

I. R. Steltner

1975

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VILLAGE OF CHATSWORTH, GREY COUNTY

GROUND WATER SURVEY

INTRODUCTION

A ground water survey of the Village of Chatsworth and vicinity was completed to determine the occurrence of local water resources and its potential as a source for a well-water supply system for the community.

The study comprises compilation of water-well records, geological reports and filed investigation of an area confined to a 3-mile (4.8 Km) radius centering on Chatsworth.

The 46 well records incorporated in this study are listed in Table 1 and wells are located on Figure 1.

Chemical and bacteriological well-water samples were collected from selected wells and are listed in Table 2.

WATER REQUIREMENTS

The population of Chatsworth was approximately 391 persons as of January, 1975, and is estimated to increase to 700 by the end of 1995. Based on an average daily consumption rate of 100 gallons (454 l) per capita and assuming a 3:1 relationship to the maximum-day rate, the water supply system should be capable of yielding 50 gpm (4 l/sec.) perennially and up to 146 gpm (11 l/sec.) on a short-term basis. This would satisfy the average and maximum day demands of the 20-year design population. Peak hourly and fire-flow demands would be provided from water storage facilities.

At present Chatsworth is predominantly a farming community and the necessary water supplies are obtained from individual private wells. Within the town limits some wells are shared.

PHYSIOGRAPHY

The environs of Chatsworth are generally rolling hills east of the town, gently sloping westward to the Sydenham River Valley. Both the Spey River and Congres Creek flow northward through Chatsworth joining up with the Sydenham River just north and west of the town. Many of the low areas are covered with swampy bogs and wet marshes which are spring-fed. It is expected that these

spring sources, common throughout the area, contribute significantly to the flows of the rivers.

SURFICIAL GEOLOGY AND HYDROLOGY

According to Chapman and Putman (1972), Chatsworth is situated on a drumlin plain. Post-glacial drainage has deepened the low areas accentuating the original hummocky relief. Many of the fields which have been cleared are very stoney as a result of the deposition of thin outwash gravels on the surface. The drumlins consisting of either washed sands and boulders or coarse poorly-sorted "till" deposits have attained thicknesses up to 100 feet (30 meters). The overburden thickness of poorly permeable silts, sands and clays in low lying areas may be less than 25 feet thick (7.5 meters). Outwash kame deposits consisting of coarse to fine sands and gravels are exposed south-east of Chatsworth near Arnott. These are underlain by fine sands and silts and the sequence may attain a thickness of approximately 100 feet (30 meters). These sands and gravels are largely unsaturated.

Any saturated geological formation having sufficient porosity and water yielding ability, permitting the extraction of water at a reasonably useful rate may be considered to constitute an aquifer. Because sands and gravels generally have well developed and connected intergranular spaces they usually exhibit a high water yielding potential, whereas clays and tills exhibiting limited interconnection of intergranular spaces do not. The sands and gravels of the Chatsworth area are largely unsaturated and therefore do not constitute a major potential source for water supply. The wells either tap the shallow water-table, yielding up to 15 gpm (1 l/sec.) or must penetrate into the upper bedrock formations to find a sufficiently reliable water supply.

BEDROCK GEOLOGY AND HYDROLOGY

The bedrock topography, as interpreted from the existing water-well records suggests a gently westward sloping erosional surface. Because the surface is erosional it can be expected to have a low rolling relief (as in Figure 2) and for this reason the bedrock elevation may vary from 755 feet (227 meters) west of the village to about 1098 feet (329 meters) to the east.

Middle and Lower Silurian dolomite and shales are ubiquitous to the study area. The Guelph-Amabel dolomites of the Albemarle Group are the uppermost unit of the series and are encountered in the water wells drilled in much of the area. Shales alternating with seams of dolomite of the Clinton and Cataract Group underly the Guelph Formation comformably and are only penetrated by wells occurring about 3 miles (.8 km) to the east of Chatsworth. Based on gas and oil well data contours on the top of the Cabot Head Formation are shown in Figure 2. The estimated thickness of the combined Albemarle and Clinton Group may vary from 50 to 200 feet with the bottom elevation occurring at about 700 to 850 feet above sea level.

A gas and oil well was drilled in 1964 by Silver City Petroleum south-west of Williamsford. A partial log reads as follows:

PLEISTOCENE	0-55'	Kame Morraine
SILURIAN		
Albemarle Group		
Guelph Formation	55-275'	Buff & blue dolomite Jointing & porous zones present - Water-bearing
Clinton Group		
Fossil Hill Formation	275-330'	Brown dolomite
Cataract Group		
Cabot Head Formation	330-335'	Green & red shales with dolomite
Manitoulin Formation	335-380'	Brown dolomite
ORDOVICIAN		
Queenston Formation	380-435'	Red shales

Water was encountered at the overburden-Guelph interface and in the Guelph Formation. Other bedrock wells outside of the study area are known to encounter water near the Fossil Hill-Cabot Head contact at depths of less than 250 feet (75 meters).

Of the 46 water well records considered in this study, approximately 96

per cent penetrate the bedrock to obtain a sufficient water supply for household and stock watering needs. About 70 per cent of these wells encountered water within 50 feet (15 meters) of the top of the bedrock, while only 2 wells, No's 1375 and 1383, penetrated in excess of 90 feet (27 meters).

The Guelph Formation is the prevailing water-bearing formation as jointing and its bedding planes contribute to a good hydraulic conductivity. The yield of the bedrock wells is generally dependent on the number, size and the interconnections of the joints and porous zones, but the storage of the aquifer is usually nominal and becomes a limiting factor when evaluating the perennial yield. From the existing well record data, it would appear that the permeability of the bedrock formations decreases with depth and that the main water-bearing horizons may be limited to the formational contacts or bedding planes. Areas of high hydraulic potential occur where permeable sands and gravels lie directly above the bedrock surface and are connected to the bedrock aquifer. A generalized contouring of the peizometric surface (water level) is shown in Figure 1. The contour spacing and configuration are indicative of hydraulic conductivity.

Forty-five per cent of the bedrock wells of the Chatsworth area, considered in this study, have reported gravels and boulders above the bedrock surface, attaining a thickness of approximately 50-100 feet (15-30 meters). The average specific capacity of these wells is about 42 gpm per foot (3 l/sec./meter) and a theoretical yield of 449 gallons (2041 litres). Higher yields have been observed south-west of Chatsworth in Well 3399 where the surficial material is predominantly dirty kame sands and gravels. Water was encountered at the overburden-bedrock interface and again at 43 feet of penetration into the bedrock. This well was tested at a rate of 1000 gpm (76 l/sec.) to have a specific capacity of 333 gpm per foot (25 l/sec./meter).

Another 55 per cent of the bedrock wells did not encounter gravels on top of the bedrock. These wells lack the additional storage of the gravels limiting the water-bearing zones to the formational contacts or bedding planes, resulting in

a low average specific capacity of 5 gpm per foot (0.1 l/sec./metre), and a corresponding theoretical yield of 304 gallons (1367 litres).

WATER QUALITY

Water samples were randomly selected from 16 water wells, and analysed for 16 parameters. The results are summarized in Table 2. Generally, the water is of good quality having an average hardness of 292 ppm $CaCO_3$ and an average of 322 ppm total dissolved solids.

All the wells sampled are bedrock wells but these can be divided into two groups; wells which have gravel on the rock surface and wells which do not. Wells having gravel above the rock show evidence of surface infiltration as chlorides and nitrates are 26 ppm and 4.2 ppm, respectively. Although the theoretical yield available from a well so constructed is good, it should be noted that a susceptability to surface contamination may exist. Wells which do not encounter a layer of gravel on the rock surface have an average iron concentration of 1.58 ppm Fe which would require treatment to reduce the concentration of the iron to permissible criteria of 0.3 ppm Fe.

The wells analysed for hydrochemistry were also tested for bacteria, and harmful organisms such as fecal streptococcus or fecal coliforms were not present in the samples although background colonies of 1820 were detected in well 3399. Background colonies may be present due to contamination during the sampling process.

FAVOURABLE TEST DRILLING AREAS

Data gathered from the ground-water survey show that there is only one major water-bearing formation or aquifer in the area. This is the Guelph-Amabel Formation and its interface with the overburden material. The possibility of developing a well capable of producing adequate quantities of water for a proposed water system appears to be favourable. The quality of the water in the aquifer in the Chatsworth area is also suitable.

Test sites have been selected on the basis of locating the water supply as close to the distribution point as possible and are located in the accompanying figure 1. Test site No. 1 is more favourable because of less susceptability to

surface contamination, being upstream of the Village of Chatsworth. If the drilling of that area is unsuccessful drilling of Site No. 2 and 3 should be undertaken.

The test drilling should test the entire Guelph-Amabel Formation to evaluate its full potential. Pumping tests should be conducted of sufficient duration to determine the full capabilities of the water-bearing formation.

CONCLUSIONS

A water works system based on a ground water soruce is being considered for the Village of Chatsworth in Grey County. It is estimated that a minimum supply of approximately 50 gpm (227 l/m) perennially and up to 146 gpm (664 l/m) on a short-term basis would be required to meet the water demand in 1995.

The geological and hydrogeological data imply that a well capable of supplying this amount of water could likely be developed in the bedrock aquifer at a maximum depth of approximately 150 feet (45 m). The most favourable areas for test drilling are Sites Nos. 1, 2 and 3 as located on Figure No. 1.

RECOMMENDATIONS

If it is decided to further pursue the utility of a ground-water supply for a proposed water works system, it is recommended that a test drilling programme be undertaken at the sites indicated in Figure No. 1. An amount of $30,000.00 would be required to undertake a thorough test drilling evaluation of the proposed areas. In accordance with Ministry policy, it will be necessary to provide for the restoration of water supplies to those residents outside of the serviced area who are affected by the operation of any new municipal well to the degree that an adequate water supply can no longer be obtained by means of a shallow or deep well pump.

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CHATSWORTH GROUND WATER SURVEY

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CHATSWORTH G.W.

Table 1 Summary of Water Well Records

Prepared by J. Stelter

Well No	Location and Elevation	con	lot	Owner	Driller	year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm/hrs)	Pumping Level (feet)	Quality	Use	Remarks log etc
703	DERBY TWP 923	III	2	M. WILSON	D. WRIGHT	64	●	5	154	19	7 2	24	FR	D S	O Dug 25 gr 45 hp 112 112 ls 154 *145
2509	SYDENHAM TWP. 1094	IX	2	G. JAMES	LOUCKS	61	●	4	154	115	1 3/4 4	145	FR	D S	O dug 40 cl 150 gr 154 *151-15
2519	930	XII	1	GULF STN	WRIGHT	57	●	4 1/4	51	6	10	12	FR	D com	o dug 5 sh 15 ls 51 *47
2520	950	XII	3	L CHARSON	BELLERBY	55	●	4	70	30	8 1/2	60	FR	D S	o dug 40 ls 70 * –
2521	923	XII	4	M. HAMILTON	WRIGHT	61	●	5	81	10	12 2	28	FR	D	o cl, bldr 12 ls 81 *75
3055	1075	IX	2	J. GARRETT	WRIGHT	69	●	5	173	31	14 2	90	FR	D	O dug 28 hp, stns 67 *167 67 f sa, bldr 125 cl, stns 131 ls 173
2253	SULLIVAN TWP 1053	I	13	R. IRVINE	DAVIDSON	64	●	4	97	56	15 2	65	FR	D S	O ts 1/2 sd 18 sd, cl 56 56 gr 65 sty hp 83 ls, sh 97 *97
2267	930	II GRW	7	A. FRASER	WRIGHT	62	●	4	103	30	5	60	FR	D S	o hp, 3 stns 39 ls 103 *100

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Table 1 Summary of Water Well Records

CHATSWORTH C.W.

Prepared by S. Streiner

Well No	Location and Elevation	con	lot	Owner	Driller	year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm) (hrs)	Pumping Level feet	Quality	Use	Remarks, log etc
2269	965	II GRW	13	S. IRVINE	WEIRMIER	47		4	41	26	10 2	—	FR	D S	0 till 13 cl 21 rk 41 * —
2270	890	II GRW	13	E WIELDON	WEIRMIER	53		4	35	19	8 2	20	FR	D S	0 ts 2 cl 8 rk 35 * 35
2276	937	II GRW	K	CLANCY	WRIGHT	59		5	148	FLW 3gpm + 1½	1½ 20	5	FR	D	0 ts 5 sd 30 gr, sms 67 67 lip, sms 80 sdy cl 115 115 cl, sms 144 ls 148 *148
2277	898	II GRW	4	F. RICHARDSON	WEIRMIER	47		4	122½	45	10 2	45	FR	D S	0 till, gr 43 sd, cl 117 117 rk 122½ * —
2401	975	I GRW	7	I CARMICHEAL	LOUCKS	65		5	120	30	15 6	70	FR	D	0 gr, bldr 78 ls 120 * 105-120
2402	970	I GRW	8	D. RYAN	LOUCKS	63		5	132	10	5 8	90	FR	D S	0 cl, gr, bldr 75 ls 132 * 130-132
3041	CHATSWORTH 975			B. PEACOCK	LOUCKS	69		5	88	25	15 6	26	FR	D	0 gr 63 ls 88 * 80
3042	905	II GRW	F	R TODD	LOUCKS	69		5	137	7	10 8	24	FR	D	0 slty, sd, gr 90 fsd 125 125 msd, gr 137 * 134
3049	CHATSWORTH 960			G. SUTHERLAND	WRIGHT	69		5	85	21	10 1	60	FR	D	0 cl, sms 21 gr, sd, sms 42 42 ls 85 * 80
3123	CHATSWORTH 960			HATTAN HARDWARE	LOUCKS	69		5	48	12	10 12	25	FR	D	0 bldr, gr 41 ls 48 * 45
3399	1025	II	13	LANDS & FORESTS	IWS	70		16	57	10	1000 6	13	FR	N.U.	0 cl, sd, gr 14 ls 57 * 14
3400	1025	II	13	LANDS & FORESTS	IWS	70		2	43	17	—	—	FR	OBS	0 cl, sd, gr, bldr 8 ls 43 * 17

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Table / Summary of Water Well Records

CHATSWORTH G.W.

Prepared by J. Skelsner

Well No.	Location and Elevation	con	lot	Owner	Driller	year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm) (hrs)	Pumping Level feet	Quality	Use	Remarks Log etc
3775	990	I GRW	9	T. FITZSIMMONS	LOUCKS	71	↑	5	63	6	15 8	10	FR	D	ogr, stns 29 ls 63 *55
1328	HOLLAND TWP 1075	I	12	D. McLEOD	BELLERBY	58	↑	5	116	50	10 1	50	FR	D	o sd cl 93 rk 116 *116
1313	950	I	1	A. WATSON	LOUCKS	66	↑	5	64	25	10 2	30	FR	D	o ts, gr 6 ls 64 *45-64
1325	971	I	4	GIRL GUIDE CAMP	WRIGHT	62	↑	5	48	17	10 1/2	35	FR	D P	o cl, stns 16 ls 48 *37-40
1327	975	I	5	D. MARTIN	WRIGHT	67	↑	5	78	6	14 1	16	FR	D	o cl, gr, bldr 40 ls 78 *60-75
1329	1060	I	13	N. SAULTER	BELLERBY	49	↑	4	76	35	10 1	35	FR	D S	o cl, stns 50 ls 76 *76
1362	1078	II	3	T. HODGSON	WRIGHT	59	↑	4 1/4	107	30	7 1	70	FR	D S	o ts 5 hp, stns 50 50 f. sd, cl 100 shly ls 107 *107
1363	1110	II	12	M. WEBSTER	WRIGHT	50	↑	4	108	30	5 1/2	–	FR	P	o cl, stns 15 ls 108 *105
1371	1095	II	15	J. HODGSON	WRIGHT	62	↑	4	73	20	10 1	30	FR	D S	o dug 21 ls 73 *70
1372	1038	II	17	D. GILDNER	WRIGHT	63	↑	5	129	12	8 2	45	FR	D	o cl, gr, bldr 60 ls 129 *90-125

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Table / Summary of Water Well Records

CHATSWORTH G.W.

Prepared by J. Stelfner

Well No	Location and Elevation	con	lot	Owner	Driller	year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm/hrs)	Pumping Level (feet)	Quality	Use	Remarks log etc
3557	975	II	12	LANGHAMMER	LOUCKS	71	↑	5	61	22	8 24	–	FR	D S	0 gr, stns 8 to 61 *55
3563	972	II	15	R. CARTER	LOUCKS	71	↑	5	100	32	8 4	40	FR	D	0 stns, gr 63 to 100 *90
3571	950	I	5	B. ELDER	LOUCKS	71	↑	5	46	9	20 7	9	FR	D	0 cl, gr 13 to 46 *40
3579	CHATSWORTH 953			B NEELANDS	LOUCKS	71	↑	5	68	30	10 ½	38	FR	D	0 stns, gr 36 to 68 *68

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Table / Summary of Water Well Records

CHATSWORTH GW

Prepared by I. Steltner

Well No	Location and Elevation	con	lot	Owner	Driller	year	Well Type	Well Diameter (inches)	Depth (feet)	Static Level (feet)	Pumping Test (gpm) (hrs)	Pumping Level (feet)	Quality	Use	Remarks Log etc
1374	1100	II	20	F WIELDON	WRIGHT	60		5	130	12	6 1	130	FR	D S	0 cl, stns, 40 stns, cl, 78 78 ls 130 *90
1375	1097	II	21	D SCHOEN	LOUCKS	62		4	152	50	8 2	60	FR	D	0 Dug 20 cl, gr 37 37 ls 152 *140-152
1376	1048	II	25	J. WHIELDON	WRIGHT	60		4	56	15	10 1	25	FR	D	0 sd, loam 5, gr. stns 10 10 ls 56 *56
1377	1150	II	29	L. WHIELDON	LOUCKS	65		5	100	45	12 9	60	FR	D S	0 dug 43 gr, bldr 78 78 ls 100 95-*98
1381	1160	III	5	H. GARRETT	BELLERBY	52		5	150	56	10 1	56	FR	D S	0 oldwell 36 cl, stns. 135 135 ls 150
1382	1062	III	12	J. KENNIFICK	BELLERBY	64		4	54	38	6½ 2	42	FR	D S	0 dug 34 gr 38 ls 54 *52
1383	1150	III	18	R. PLAYFORD	WRIGHT	63		4¼	195	60	12 1	100	FR	D	0 dug 24 cl, gr 100 100 sd, cl 167 ls 187 rk 195 *190
1384	1110	III	20	J.D. CEASER	LOUCKS	63		5	140	35	10 4	45	FR	D S	0 dug 34 cl, bldr 78 78 ls 140 *110-140
2643	1055	I GRE	12	A. CRASHLEY	WRIGHT	68		5	128	60	7 2	60	FR	D S	0 gr, bldr 68 ls 128 *79-119
3046	980	II	14	W. BAILEY	LOUCKS	69		5	56	26	15 6	30	FR	D	0 bldr, stns, gr 32 ls 56 *50
3093	1155	III	5	M. STEFFLER	WRIGHT	69		5	155	8	8 1½	80	FR	D	0 sd, stns 20 sd, cl 35 35 hp, stns 120 cl, sd 131 ls 155 *150
3341	960	I	5	I. JORDASON	NEUMAN	70		4	60	18	10 3	22	FR	D	0 ts 6 cl, bldr 48 rk 60 *50

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Table 2. Summary of Water Analyses

Prepared by S. S. Sisson

CHATSWORTH G.W.

Source and Number	Location	Date Sampled	pH	Colour Hazen Units	Turbidity Jackson Units	Specific Conductance mmhos at 25°C	Total Dissolved Solids (ppm)	Total Hardness as $CaCO_3$ (ppm)	Alkalinity as $CaCO_3$ (ppm)	Chemical Constituents in parts per million (ppm): Chloride Cl	Sulphate SO_4	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium K	Free Ammonia (N)	Total Kjeldahl (N)	Nitrite (N)	Nitrate (N)		Remarks
1329	N. SAULTER	MAY 14 1975	7.5			740	420	312	276	64	19	.05	80	27	41	2.9	<.1	.1	<.02	1.6		
2276	C. LANCY	MAY 14 1975	7.8			540	355	300	246	5	51	3.6	69	31	5	1.2	<.1	.2	<.02	<.2		
3042	R. TODD	MAY 14 1975	7.7			515	305	288	256	5	18	5.5	74	25	1	0.6	.1	.4	.08	1.9		
2270	E. WEEDEN	MAY 14 1975	7.8			555	360	308	274	6	22	<.05	83	24	4	0.6	<.1	.2	<.02	3.2		
2277	F. RICHARDSON	MAY 14 1975	7.5			618	380	352	308	4	20	<.05	88	32	2	1.2	<.1	.2	<.02	3.8		
703	M. WILSON	MAY 14 1975	7.5			578	330	328	282	5	35	<.05	74	35	2	0.9	<.1	.1	<.02	2.2		
1381	H. GARRETT	MAY 14 1975	8.2			450	265	242	236	3	18	.50	50	28	6	1.3	<.1	.1	<.02	<.2		
2519	GULF STN	MAY 14 1975	7.4			680	400	324	294	41	20	1.0	86	26	23	1.1	.3	.3	<.02	<.2		
3041	B. PEACOCK	MAY 14 1975	7.4			602	340	328	290	14	30	1.5	85	28	10	2.3	.1	.2	<.02	<.2		
2402	D. RYAN	MAY 14 1975	7.9			502	290	284	262	7	17	3.9	56	35	3	0.8	.1	.1	<.02	<.2		
1383	R. PLAYFORD	MAY 14 1975	7.8			429	235	228	226	3	13	.08	40	31	10	1.3	<.1	.2	<.02	<.2		
1377	L. WHEILDON	MAY 14 1975	7.7			1060	700	470	368	39	77	<.05	104	51	19	5.5	.1	.3	<.02	16.		

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Table 2 Summary of Water Analyses

Prepared by SS

Source and Number	Location	Date Sampled	pH	Colour Hazen Units	Turbidity Jackson Units	Specific Conductance mmhos at 25°C	Total Dissolved Solids (ppm)	Total Hardness as $CaCO_3$ (ppm)	Alkalinity as $CaCO_3$ (ppm)	Chemical Constituents in parts per million (ppm)												Remarks
										Chloride Cl	Sulphate SO_4	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Free Ammonia (N)	Total Kjeldahl (N)	Nitrite (N)	Nitrate (N)		
1374	F. WHELDON	MAY 14 1975	8.0			477	300	268	248	3	17	1.1	52	33	5	1.4	<.1	.1	<.02	<.2		
3046	W. BAILEY	MAY 14 1975	7.8			500	285	284	246	5	13	<.05	69	27	2	0.5	<.1	.1	<.02	.4		
3571	B ELDER	MAY 14 1975	7.9			485	280	268	246	4	18	<.05	66	25	2	0.8	<.1	.1	<.02	.4		
3999	L. & F. CHATSWORTH	MAY 14 1975	7.8			473	290	260	230	10	17	<.05	66	23	4	0.9	<.1	.2	<.02	.4		
1377	L. WHELDON	JULY 2 1975	7.5			1100	760	480	376	48	110	<.05	96	58	17	57	<.1	.3	<.02	11.0		

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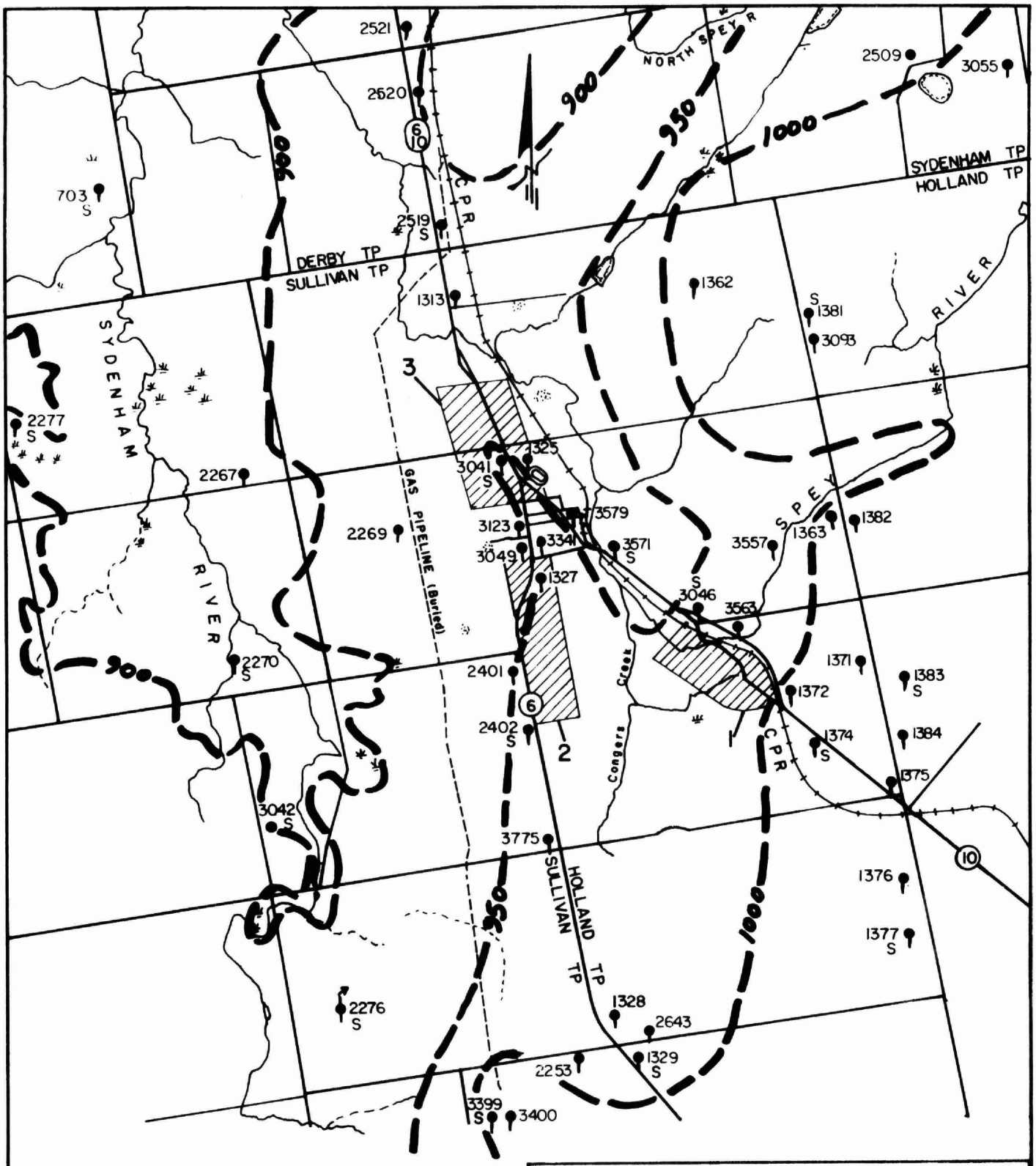
TABLE 3 SUMMARY OF BACTERIOLOGICAL RESULTS CHATSWORTH G.W. PREPARED BY S.S. [illegible]

LOCATION	DATE	FECAL COLIFORMS	FECAL STREPTOCOCCUS	TOTAL COLIFORMS	BACKGROUND COLONIES	
1329	MAY 14 75	0	0	0	0	
2276	MAY 14 75	0	0	0	0	
3042	MAY 14 75	0	0	0	0	
2270	MAY 14 75	0	0	0	24	
2277	MAY 14 75	0	0	0	0	
703	MAY 14 75	0	0	0	220	
1381	MAY 14 75	0	0	0	24	
2519	MAY 14 75	0	0	0	0	
3041	MAY 14 75	0	0	0	0	
2402	MAY 14 75	0	0	0	0	
1383	MAY 14 75	0	0	0	0	
1377	MAY 14 75	0	0	0	122	
1374	MAY 14 75	0	0	0	0	

MINISTRY OF THE ENVIRONMENT

TABLE 3 SUMMARY OF BACTERIOLOGICAL RESULTS CHATSWORTH C. W. PREPARED BY S. Sisson

LOCATION	DATE	FECAL COLIFORMS	FECAL STREPTOCOCCUS	TOTAL COLIFORMS	BACKGROUND COLONIES	
3046	MAY 14 75	0	0	0	0	
3571	MAY 14 75	0	0	0	0	
3399	MAY 14 75	0	0	6	1820	



LEGEND

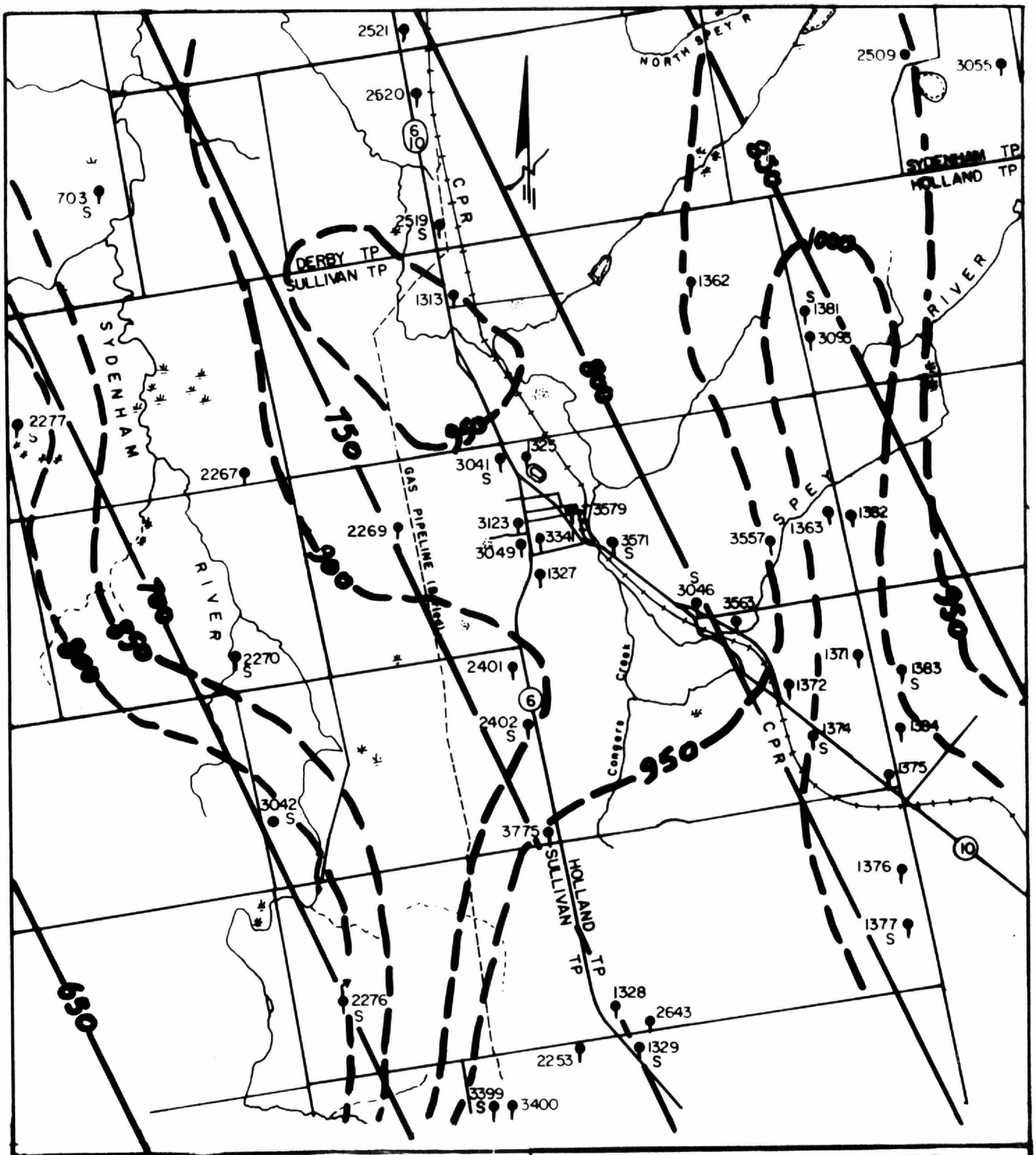
- DRILLED WELL IN BEDROCK
- DRILLED WELL IN OVERBURDEN
- FLOWING WELL IN BEDROCK
- S SAMPLE LOCATION
- FAVOURABLE TEST DRILLING AREAS
- WATER LEVEL CONTOUR (feet a.s.l.)

MINISTRY OF THE ENVIRONMENT

VILLAGE OF CHATSWORTH

GROUND WATER SURVEY

Date: OCT 75	Scale:	Drawing No:
Prepared by: SFS	1 in = 0·79 mi	1



LEGEND

BEDROCK SURFACE CONTOUR* (feet above sea level)

STRUCTURE CONTOUR* TOP OF CATARACT (calculated dip = 37 ft/mi at a strike of 158° Azimuth)

* Note: The difference between these contours is the thickness of both the Albemarle and Clinton groups

MINISTRY OF THE ENVIRONMENT

VILLAGE OF CHATSWORTH

GROUND WATER SURVEY

Date: OCT 75	Scale:	Drawing No.
Prepared by: SFS	1 in = 0.79 mi	2